

**Notice of Allowability**

Application No.

10/814,760

Examiner

Suchira Pande

Applicant(s)

BUCHANAN ET AL.

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5 January 2007.
2. ☒ The allowed claim(s) is/are 1-8,27 and 31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 8/11/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

JEFFREY FREDMAN  
PRIMARY EXAMINER

Suchira Pande  
Examiner  
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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I invention claims 1-8, 27 and 31 directed to method in the reply filed on 5 January 2007 is acknowledged. Examiner had required a restriction between method and product claims. The traversal is on the ground(s) that the oligonucleotide primers claimed (components of kit—product) cannot be used to make a polypeptide. This is not found persuasive because the kit components can be used to purify a particular DNA using column purification method of purifying nucleic acid. Alternatively these oligonucleotides can be labeled and used as probes for hybridization in FISH assays. Therefore, the requirement is still deemed proper and is therefore made FINAL.
2. Claims 9-26, 28-30, 32-50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement.
3. Examiner agrees with the argument presented by applicant with respect to the claim 31 and the whole claim will be examined both for CRH as well as POMC gene in this action.
4. Examiner called Attorney Irene Bridger on January 25, 2007 at 403-298-8157 to request permission to cancel claims 9-26, 28-30 and 32-50. Attorney consulted with the client and gave authorization to Examiner on January 26, 2007 to cancel the withdrawn and non elected claims in the case. Accordingly claims 9-26, 28-30 and 32-50 are cancelled.

***Allowable Subject Matter***

5. The following is an examiner's statement of reasons for allowance: The claims are drawn to a method of detecting a specific polymorphism in bovine CRH gene and correlating specific genotypes of cattle at CRH and POMC loci with specified traits.

Regarding these method claims prior art teaches:

a) The sequence of bovine CRH gene SEQ ID No. 1. The 584 nucleotide sequence was submitted directly to GenBank by Buchanan, F.C., Thue, T.D. and Schmutz, S.M. on 24 January 2001 and is available as AF340152.

b) Buchanan et al. (2002) in a paper presented in 7<sup>th</sup> world Congress on Genetics Applied to livestock production in Montpellier, France, teach a method for distinguishing bovines having a CRH gene polymorphism, comprising: isolating a genomic DNA sample from a bovine; amplifying a region of the bovine CRH gene using an oligonucleotide pair to form nucleic acid amplification products comprising amplified CRH gene polymorphism sequences; detecting a polymorphism present in the CRH gene at position 240 of SEQ ID No. 1 identified in the paper as a SNP at 231 bp (amino acid 77). The polymorphism was analyzed by using Taq1 enzyme to generate RFLP. The substitution of "C" to "G" resulted in generation of new TaqI site that was present in samples containing "G" and not in samples containing "C".

However, Buchanan et al. (2002) do not show detecting a polymorphism present in the CRH gene at position 22 of SEQ ID NO: 1; analyzing the polymorphism, and wherein the presence of a "G" residue is associated with the phenotypes of increased

hot carcass weight, increased end-of-test rib-eye area and increased adjusted weaning weight, as compared to bovines with a "C" residue at position 22 of SEQ ID NO: 1.

Prior art also does not teach wherein a "GG" genotype at the CRH gene and a "TT" genotype at the POMC gene (a "GG-TT" phenotype) is associated with the desired phenotypes of increased adjusted weaning weight, increased hot carcass weight, increased shipping weight, increased average daily gain and increased end-of-test rib-eye area, greater than that which would be obtained for animals homozygous for only one of the CRH and POMC loci.

Buchanan et al. (2002) Genet. Sel. Evol. 34: 105-116 teaches "C" to "T" substitution associated with exon 2 of leptin gene. A PCR-RFLP analysis of four beef breeds indicated that "T" allele was associated with fatter carcasses of British herd and the "C" allele with leaner carcasses associated with Continental herd. The "T" allele, results in addition of extra cysteine to the protein, causes partial loss of biological function of Leptin, which is a hormone product of obese gene. Also animals homozygous for T allele i.e. "TT" homozygote expressed higher amount of leptin mRNA (see abstract). A review by Pritchard et al. (2002) J. of endocrinology 172, 411-421 implicates a role of POMC in obesity. However prior art does not teach wherein a "GG" genotype at the CRH gene and a "TT" genotype at the POMC gene (a "GG-TT" phenotype) is associated with the desired phenotypes of increased adjusted weaning weight, increased hot carcass weight, increased shipping weight, increased average daily gain and increased end-of-test rib-eye area, greater than that which would be obtained for animals homozygous for only one of the CRH and POMC loci.

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Consequently the claimed invention is novel and not obvious over the cited prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suchira Pande whose telephone number is 571-272-9052. The examiner can normally be reached on 8:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Suchira Pande  
Examiner  
Art Unit 1637

  
JEFFREY FREDMAN  
PRIMARY EXAMINER

1/16/07